Amendments to the Specification

Please delete the heading before paragraph [0001]

Please replace the heading before paragraph [0002] with the following amended heading:
BACKGROUND ~~INFORMATION~~

Please add the following new paragraphs after paragraph [0007]:

[0007.1] WO 98/43111 A1 describes a method for determining the vertical distance between an object and a moving device. For this purpose, the distances of a plurality of transmitting and receiving devices installed at separate locations to an object is determined using monostatic measurements, and the object position is computed from the point of intersection of the presence curves associated with the individual receivers. The object position thus determined is verified with the aid of additional bistatic distance measurements.

[0007.2] The method for distance determination described in German Patent DE 198 53 683 C1, aims at increasing the reliability of distance sensors in the presence of interference, in particular at recognizing and filtering out signals of other nearby sensors of the same type. It is indicated here that ambiguities may be successfully recognized and corrected by a distance measurement, as well as by determining the propagation time difference between two bistatic receiving paths.

[0007.3] DE 195 26 448 A1 describes a radar system in which three receiving elements are situated at a lateral distance from one another for receiving radar signals. In the detectors associated with these receiving elements, the phase information of the received signal is analyzed and supplied to a phase comparator to determine the phase difference and therefrom subsequently the angle to a target object. The amplitude and phase information for each receiving element may be determined from the received signal only as a mean value of the sum signal. Therefore, multitarget capability is only possible here if the number N of receiving elements is greater than the number Z of target to be differentiated; the relationship $N \geq 3/2*Z$ must be observed.

Please replace paragraph [0008] with the following amended paragraph:

[0008] ~~The~~ An object of the present invention is ~~therefore~~ to avoid one or more of the disadvantages of triangulation and/or to provide a multitarget-capable method and a multitarget-capable sensor device for distance and angle positioning of close-range target objects where there is ~~no~~ reduced risk of ghost target detection.

Please delete paragraph [0009].

Please add new paragraphs [0009.1] and [0009.2] before paragraph [0010] as follows:

[0009.1] The present invention provides a multitarget-capable method for distance and angle positioning of close-range target objects. The method includes the steps of: a) transmitting a characteristic signal with the aid of a transmitting antenna (11) of a first sensor element (10); b) receiving the reflected characteristic signal at at least two adjacent receiving antennas (1, 2) of a first sensor element (10); c) measuring the propagation time differences of the reflected characteristic signal to the two adjacent receiving antennas (1, 2) to determine the distances of the target objects to the first sensor element (10); and d) measuring the phase differences of the reflected characteristic signal between the two adjacent receiving antennas (1, 2) to determine the angle of the target objects to the first sensor element (10). The angle to the target objects is determined by subjecting each reflected transmission signal received by the receiving antennas (1, 2) to a correlation with the characteristic signal to thus determine a complex correlation function, which uniquely associates the obtained phase information with a distance. In addition, a conclusion concerning the particular angle of incidence is drawn for each target object separately from the phase difference between the signals at the two receiving antennas according to the principle of retrodirective arrays.

[0009.2] In addition, the present invention provides a multitarget-capable sensor device for distance and angle positioning of close-range target objects. The sensor device includes a first sensor element (10) having a transmitting antenna (11) and at least two adjacent receiving antennas (1, 2), in which the transmitting antenna (11) of the first sensor element (10) is designed for transmitting a characteristic signal; in which the at least two adjacent receiving antennas (1,

2) of the first sensor element (10) are designed for receiving the reflected characteristic signal; in which the sensor device furthermore includes means (21, 22, 31, 32, 40, 50) designed for measuring the propagation time differences of the reflected characteristic signal to the two adjacent receiving antennas (1, 2) to determine the distances of the target objects to the first sensor element (10); and for measuring the phase differences of the reflected characteristic signal between the two adjacent receiving antennas (1, 2) in order to determine the angle of the target objects to the first sensor element (10). The sensor device also includes a correlator and a comparer unit to subject each reflected transmission signal received by the receiving antennas (1, 2) to a correlation with the characteristic signal to thus determine a complex correlation function, which uniquely associates the obtained phase information with a distance. In addition, a conclusion concerning the particular angle of incidence is drawn for each target object separately from the phase difference between the signals at the two receiving antennas according to the principle of retrodirective arrays.

Please replace the heading before paragraph [0014] with the following amended heading:
BRIEF DESCRIPTION OF THE DRAWINGS

Please replace the heading before paragraph [0027] with the following amended heading:
DETAILED DESCRIPTION ~~OF THE PREFERRED EMBODIMENTS~~

Please replace paragraph [0027] with the following amended paragraph:
[0027] With reference to Figure 2, a sensor element 10 for determining, according to the present invention, angle of incidence ϕ (direction) is shown in the case of a single target object (not shown). Sensor element 10 has a transmitting antenna 11 and at least two receiving antennas 1 and 2. Each of receiving antennas 1 and 2 is connected to a quadrature detector 21, 22, which demodulates the particular signals U_1 and U_2 of the receiving antennas into in-phase (I) and quadrature (Q) signals. Subsequently, the demodulated signals are subjected to an A/D conversion in the particular converters 31 and ~~31~~ 32 and supplied, over bus 40, to processing unit 50, where angle of incidence ϕ of the wave reflected on the single target object is computed using the phase difference between the receiving antennas on the basis of the following formula:

$$\sin\varphi = \frac{2}{\pi}\arctan\left(j\frac{\underline{u}_1 - \underline{u}_2}{\underline{u}_1 + \underline{u}_2}\right)$$

Please delete paragraph [0035]

Please add the following new paragraph before paragraph [0036]

[0035.1] For example, if a target object is at an angle α_1 and a second target object is at angle α_2 to adjacent receiving antennas 1 and 2, the angles of incidence α_1 and α_2 of the wave reflected by the target object may be computed from the phase difference between the receiving antennas using the following formulas:

$$\sin\alpha_1 = \frac{2}{\pi}\arctan\left(j\frac{\underline{u}_{11} - \underline{u}_{21}}{\underline{u}_{11} + \underline{u}_{21}}\right)$$

$$\sin\alpha_2 = \frac{2}{\pi}\arctan\left(j\frac{\underline{u}_{12} - \underline{u}_{22}}{\underline{u}_{12} + \underline{u}_{22}}\right)$$

Please delete paragraph [0037]

Please add the following new paragraph before [0038]:

[0037.1] In this case the use of two or more sensor elements installed at different locations is proposed, according to the present invention. This produces the unambiguity, because two or more target objects which have the same distance to one of the sensor elements must have a different distance to the other sensor element(s). Therefore, if the angle of two target objects cannot be detected by one sensor element because the target objects are located in the same distance cell, it is possible to determine the position of the target objects in each of the additional sensor elements, because the target objects are located in different distance cells with respect to those sensor elements. In principle, two sensor elements are sufficient to position all target

objects in this way. Further sensor elements may, however, be used to increase the accuracy and the range of unambiguity, also advantageously providing assurance in the case where there is no or insufficient reception at one of the sensor elements.